



Shire of EAST
Pilbara
AUSTRALIA'S LARGEST SHIRE

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Good Afternoon Noel,

After reviewing *"Improving access to, and operation of, the Pilbara electricity network – the North West Interconnected System (NWIS)"*, I would like to make following comments from the Shire of East Pilbara.

1.0 GENERAL COMMENTS

Although the East Pilbara population is far smaller than other regional centres, the level of industry and the amount of wealth being generated for the national accounts and transported to the port cities must be taken into account.

Whilst places like Karratha, Port Hedland and Onslow are the centre of export capacity and capability for the resources sector, 98% of Western Australia's iron ore does not come from the coast of the Pilbara, but rather from the inland region.

The estimated population of the Shire is 25,000 of which (including fly in, fly out) 9,000 live in Newman, which is the home of BHP Iron Ore's major Pilbara Iron Ore mine; Mt Whaleback. The Shire history is rich in mining and pastoral activities and provides a significant part of the State and Federal wealth.

The Shire of East Pilbara's Gross Regional Product is \$8.115 billion, or \$679,112 per capital (the Australian per capital Gross Domestic Product is \$76,943, nearly 9-fold smaller than our Shire).

The mining sector dominates the Shire of East Pilbara economic landscape. Mining is estimated to contribute \$16.017 billion (89%) of total output generated within the Shire, followed by construction's \$709 million (4%) and manufacturing's \$361 million (2%).

Employment within the shire is focussed on the mining sector which contributes 7,472 jobs (66% of employment), followed by the construction sector's 935 jobs (8%) and the accommodation and food services sector's 598 jobs (5%).

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Issues Paper Not Interconnected with the Inland

My first comment must surely relate to the lack of emphasis based on anything other than the coastal strip of the Pilbara, both by this paper and indeed by the whole NWIS and discussions on electricity generation and infrastructure.

Any discussion on the future of power in the Pilbara should be based on the whole Pilbara, including both the East and also the Western Desert. I imagine that similar comments could be made by our neighbours in the Ashburton region; they may benefit from the 'coastal' status quo if the NWIS I ever extended to Onslow but may have concerns about that not addressing Tom Price, but I will leave this for them to comment on.

Current arrangements, particularly in the Newman townsite, are restricted to supply by BHP; this outcome is historic in nature, but not necessarily efficient or cost effective for users. Limitations pertaining to the level of regulation are extreme, often resulting in a disincentive for new developers looking to come into our area.

There is limited supply offered to Roy Hill and Yandi mines, and they are not linked to other supplies and therefore unlikely to be cost effective or the best utilisation of infrastructure. The same could also be said of the stand alone systems which are currently available in Nullagine and Marble Bar, where disruption of service appears to be quite common.

Far from the State Government's mandate in the Pilbara Investment Blueprint to diversify the regional economy, the status quo restricts the growth and potential export capacity of our Shire and Western Australia more broadly by preventing new mining entrants.

To the best of my understanding, there is no strategic government interest in helping major mining corporations prevent competition from junior miners by starving the energy network in the region, just as there is no strategic benefit to limiting energy competition.

Your issues paper states that "efficiency will boost regional economic growth and development and create jobs", and that is not wrong. What the Pilbara requires is a State Government willing to ignore the historical factors that have entrenched power with a few key corporates, and contributed to a "fragmented, high-cost and uncompetitive" system that has "evolved in an ad-hoc manner, with high levels of uncertainty and risk restricting optimal outcomes."

Both the State and Commonwealth Government are committed through the Investment Blueprint and the Northern Australia White Paper to develop the 'north' in order to meet the challenge and opportunities of a fast-growing and prosperous Asia, one of which is the export of solar and wind power to Singapore and Indonesia.

Recent work done with the support of the Pilbara Development Commission to investigate the feasibility of exporting solar has led to an entirely new potential energy industry, and recently announced plans for the \$13 billion Asian Renewable Energy Hub include the provision of 5000MW of wind power, and 2400MW further down the track from solar panels.

Planning Absent a Long-Term Renewables Vision

This leads to our second general comment, which is that not only are the current plans very 'coastal' centric, there is also no clear mechanism or strategic plan in place to connect large scale solar in the inland Pilbara region.

If the region is to not only have access to the power it needs in an efficient system and reasonable price, but also have the capability to generate new renewable energy for domestic consumption and export, then a NWIS that encompasses the whole of the Pilbara is essential.

The status quo for power availability, cost, and competition is entirely out of step with not only other key State Government initiatives, but completely inconsistent with the Commonwealth growth agenda for the 'north', counter to the strategic community planning of the Shire of East Pilbara, and all to the long-term detriment to the community.

Solving the Pilbara's energy challenges in the absence of a broader state or national plan is an underwhelming response to the challenges and opportunities that face us. The issues paper makes no mention of the disruptive and positive effect of base load power provided by wind and solar, and it does not speak to the interconnectness of the nation as a whole.

Not only does the NWIS not address the whole Pilbara, the paper doesn't address context of the whole nation. It is lacking a willingness to radically diverge from historic ways of doing things at an opportune moment

At the New Pilbara Conference 2017, Dr Matthew Stocks, Research Fellow at the Australian National University, presented a bold new vision to replace the existing North West Interconnected System (NWIS) in the Pilbara with renewable energy generators including hydro electricity, solar and wind power. Dr Stocks stated:

"The Pilbara region of Western Australia has one of the best solar resources in the world as well as excellent wind resources and extensive opportunities for pumped hydroelectricity storage (PHES). The purpose of the project is to elucidate a visionary approach to both near and long term large-scale renewable energy opportunities in northern and western Australia,"

Dr Stocks' proposals included:

- Interconnection of the NWIS and South West Interconnected System (SWIS) via high voltage DC(HVDC) cables to allow sharing of renewable electricity, with possible extension to the National Electricity Market (NEM)
- Reduction of iron oxide to iron using renewable electricity in the Pilbara
- Export of energy rich chemicals and materials produced using renewable electricity
- Export of renewable electricity to Indonesia via HVDC cables

A Plan that is Compatible with the Future

And so my third general comment would be this; we should approach this holistically, in the context of the rest of the State's energy needs and the nation's capacity to power a growing Asia. We must use this opportunity to embrace large-scale renewables, to connect the north to the south (and Newman to the north), and make sure we remain bold in achieving the future we want.

We have sunlight, wind, land, proximity to Asia, ports and lithium; what would could we do? I have included an excerpt here from a Pilbara Regional Council submission to the Productivity Commission on transitioning regional economies from the legacy of the mining investment boom, because it represents the kind of thinking that is lacking in the energy space:

Imagine a hypothetical investment scenario facing an American entrepreneur such as Elon Musk of Tesla.

The Commonwealth, State and Local Governments could come to his table, and present an offer; a seat on the Pilbara Enterprise Zone Advisory Group, and a concessional loan is offered from the Northern Australia Infrastructure Fund. Other Commonwealth and State Government fees and charges are waived, and local government provides the land. The total concessions would have to be enough to make it worth his while, and low enough to still produce enough regional benefit for the Pilbara.

If this was the scenario, what is the likelihood that the next Tesla GigaFactory opens in the Pilbara? An Australian base of operations would be a perfect staging post for a Tesla market expansion strategy into Asian markets, and with a freight facility at Lumsden Point, the company would need very little else in order to start on the right foot with a new facility at the base of a mountainous population growth in Asia over the next century. With the production of solar panels and batteries being one of the most potentially lucrative growth markets in the world, strategic positioning and low costs of production and shipping will be crucial.

Now there's a step change for the Pilbara. A multi-billion dollar deal to put a solar powered megafactory in Port Hedland or Karratha, with access to port, sun, incentives and Asia. But the challenge doesn't revolve around the logistics of this hypothetical, it revolves around the overwhelming feeling most people have when faced with that kind of challenge; fear. Because its that challenge the leads to us not even stepping up to the plate. Fear is what keeps us from ever getting far enough to come up against logistical challenges in proposals like this.

The NWIS should be reviewed for its compatibility with the future, not simply to fix decades of uncoordinated investment. To make ourselves attractive to the likes of Elon Musk and other major, global industry and energy entrepreneurs. We must be bold to attract that kind of investment, and I submit that the natural resources of our Shire and link to ports for export to Asia would make the Shire of East Pilbara the perfect location for the next 'GigaFactory'.

Faced with energy troubles in South Australia, Elon Musk solved the problem in 100 days with the biggest battery in the world. **What if Western Australia asked him to fix the NWIS?** What innovative, industry/entrepreneurial response would he have for us?

Competition is good, duplication is not, prices would be cheaper in an efficient system. On this all can agree. But what if we decided to be brave? This scenario, I assure you, is ripe for that kind of thinking.

I welcome Public Utilities Office providing this discussion paper, and look forward to being an active contributor into the future. Below I have answered some of the specific issues paper questions.

2.0 SPECIFIC FEEDBACK ON QUESTIONS RAISED

Q1. Would customers outside Horizon Power's network benefit from competition.

Yes. Local governments that have access to competitive power supplies are better able to attract more and diverse industry to their region with the added attraction of both availability and cost effective supply of power.

Within the Pilbara, all of the four local governments appear to be restricted either by the current NWIS system or indeed by their exclusion from the system and their reliance on power from the major resource companies which are often in direct competition with new or incoming industry players wishing to enter the area.

Allowing competition and coordinating use of energy infrastructure would allow for a greater diversity of energy products to consumers, and provide a much more stable entry environment for new industry and businesses.

The Shire of East Pilbara is supportive of the move to allow third-party access to the NWIS, and requests specific planning be put in place to ensure one of the first upgrades made by the third-party is the connection of Newman to the NWIS.

Q2. Does the lack of coordinated approach to electricity infrastructure in the NWIS present a barrier to entry for juniors and renewable energy projects.

Yes. The current arrangement of power being provided in the inland Pilbara and in particular the East Pilbara by a major resource company is certainly a barrier to others. The lack of State Government coordination has led to an entire community being dependent and beholden to BHP's interests and requirements.

For example, the cost of the infrastructure required to meet the high standard set by BHP far outweighs that required by Horizon and others in the market. This makes set up cost far too expensive for many, and has on many occasions limited and certainly delayed developments being undertaken by the Shire.

Q3. Is there economic benefit to a consolidated approach to coordinating development of electricity assets in the NWIS?

Yes. Any system that is purpose built for an entire region should have the necessary efficiencies of scale to provide a more cost effective solution for all users.

It appears that what exists currently in the region is very much restricted to the coastal strip, leaving an ad-hoc patchwork of infrastructure across the rest of the region. Although both Horizon and the Resource Companies are in the space, they are not in competition with each other, nor do they work together to gain efficiencies in either shared infrastructure, cost or benefit to the users.

Thus the status quo is that there is no incentive for competition, and no impetus for collaboration.

The coordination of electricity assets will reduce the 'duplication effect', which is so common across the Pilbara. There is a Rio Tinto road, and a BHP railway, and an Alinta power line. This is the historic legacy of a region built and developed on the back of major resource expansions and discoveries, rather than with a specific and strategic community plan and State Government network for essential services.

A more efficient system will obviously mean less duplicated infrastructure, and lower costs to residents and businesses alike. Businesses will grow and expand as a result, and residents will have a higher disposable income and greater quality of life. A coordinated energy network will also unlock future investments, leading to a more diversified and economically competitive region.

Q10. What barriers do you see to the introduction of an independent system operator in the NWIS.

The issues paper well establishes the challenges of the NWIS as it pertains to central management of the network. Whomever manages the network, the State Government must ensure as part of those negotiations that NWIS be extended to include the inland Pilbara and in particular the East Pilbara.

Q11. What operational and financial inefficiencies result from the current NWIS system operation model and could be addressed by introducing an independent system operator.

The lack of competition forces consumers like the Shire of East Pilbara to pay a premium or tariff for energy with little to no recourse or negotiating capability.

Q12. Are there significant foregone opportunities for providing more efficient dispatch of available generation resources in the NWIS, or for the integration of currently non-interconnected loads and generators in the region? What are the barriers?

Yes. The laws of supply and demand dictate that if supply exceeds demand, then the price of an item will fall to meet demand. By maintaining an inefficient 'network' where more power than is needed is generated (where export capacity comes from) but in circumstances where it cannot be provided freely to consumers, the price is artificially higher than the market would dictate.

The forgone opportunity here is that once again, in energy as with so many other essential services like flights and accommodation, external and unique forces cause significant distortions to the Pilbara markets, leading to a lower standard of living despite having one of the highest per capital GRP's in the country.

Every non-integrated power generating technology puts upward pressure on prices, but artificially cutting off a portion of the available supply. The issue here is ownership of those power generating assets, and the willingness to take hard decisions for the benefit of the region as a whole over individual and corporate interests.